Responses to Stakeholder Input on the Five-Year Review

As summarized in Section 5.1 of this fourth five- year- review (FYR) report, the public received notification of the start of the FYR process in June 2016. On June 6, 2016, a and a presentation was provided at given at the Rocky Flats Stewardship Council (RFSC) meeting held on June 6, 2016. On June 10, 2016, the notice of the start of the FYR was emailed to the community notice distribution list and on June 13, 2016 was posted to the U.S. Department of Energy, Office of Legacy Management (DOE-LM) website. In response to inquiries for additional information on the FYR process, an update on the FYR notification was posted to rovided to the stakeholders on ththe DOE-LM website on November 9, 2016 and provided DOE-LM website and via email to the community notice distribution list on November 11, 2016.

The scope of this fourth FYR report is the Central Operable Unit (COU). This fourth FYR report evaluated changes to toxicity factors and other risk parameters in relation to the unlimited use and unrestricted exposure (UU/UE) determination for ; lands within the Rocky Flats National Wildlife Refuge (the former Peripheral OU [POU]) and OU3, offsite areas (see Appendix C). were not evaluated in this FYR report. Some of the input received from stakeholders concerned topics that are not related to remedy implementation or performance at the COU and/or are outside the scope of this FYR. As such, these topics are not addressed in this appendix. Stakeholder input was grouped into general topics, whereif possible, in order to streamline the response process. The following table provides a summary of input received from the public and corresponding responses. Input that did not readily fit into one of the groups identified in the first column of the table below, were addressed individually at the end of the table.

Group	Input Summary	Response
A. FYR Process	Input was received related to the FYR process, as follows: 1. Public comment period for the FYR report. 2. Scope of the FYR. 3. Federal agency responsibilities and potential conflicts of interest.	1. *Public comment period for the FYR report.* The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) does not require a formal public comment period for the FYR report; it only requires that the public be notified of the start of the FYR process and of the availability of the final FYR report (EPA 2001). Interested RF stakeholders were notified of the start of the FYR at a June 2016 Rocky Flats Stewardship Council (RFSC) meeting, via email, and through notices posted on the DOE-LM website. The public was invited to submit questions and other input to the e-mail address provided in the notice and listed on the LM website. A notice when the final FYR report is issued will be distributed in the same manner as the initial FYR notice. As always, DOE accepts input from the public during RFSC meetings, and in response to quarterly and annual reports and presentations, in response to contact records, and through other means of contact (formal or informal). 2. *Scope of the FYR.* Federal environmental law (CERCLA) requires that EPA guidance indicates that a FYR is completedbe conducted for sites where hazardous substances, pollutants, or contaminants remain above levels that allow for unlimited use and unrestricted exposure (UU/UE)(EPA 2001).: If DOE "…selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, [DOE] shall review such remedial action no less often than each 5 years after the initiation of such remedial action…" (CERCLA §121(c)). The COU is the only operable unit associated with the former RFP that meets this condition; and therefore, EPA CERCLA requires that a FYR be completed for the COU every 5 years. The remaining operable units associated with the former Rocky Flats Plant (the POU [now the Wildlife Refuge] and OU3) were determined to meet UU/UE conditions in 2007 and were deleted from the National Priorities List (NPL) (Vol.ume 72 Fed.eral Reg.ister p. 29276). Therefore, a FYR is not required for the lands that comprise the POU or OU3. This fourth FYR report, however, did evaluated changes to toxicity factors and other risk parameters in relation to the UU/UE determinations for these two operable unitsOUs to determine if the UU/UE designation is still valid (see Appendix C). 3. *Federal agency responsibilities and potential conflicts of interest.* The U.S. Environmental Protection Agency (EPA) is not responsible for conducting FYRs at federal NNPL sites. CERCLA §120 allows, and Executive Order 12580 directs, the federal department with control of the site to serve as the lead agency for the FYR with EPA providing oversight. However, EPA retains final authority to make or concur with protectiveness determinations (EPA 2001). For the COU, DOE-LM is considered the lead agency and completes the FYR; EPA will either concur with the lead agency protectiveness determination or provide independent findings. CERCLA does not require that an independent authority, other than the EPA, evaluate the protectiveness of the remedy.

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Group	Input Summary	Response
B. Accelerated Cleanup	The protocols and cleanup standards applied during accelerated actions at the RFP were insufficient and the cleanup was incomplete.	The former Rocky Flats RFP was investigated and remedies were selected in compliance with the Rocky Flats Cleanup Agreement (RFCA), which served as both a federal facilities agreement under CERCLA and a consent order under the Colorado Hazardous Waste Act. (RFCA),This agreement was signed by DOE, EPA, and the Colorado Department of Public Health and Environment (CDPHE), EPA, and DOE in 1996. The RFCAagreement prescribed an accelerated closure process based on applicable environmental regulations and close consultation among the agencies. For example, the sSurface soil action levels in the agreement were calculated using very conservativeprotective methodologies and based on a lifetime excess cancer risk of 1 in 100,000 for a Wwildlife Rrefuge Wworker. For By comparison, the normal lifetime cancer risk in the U.S. is approximately 1 in 3. When exceeded, these action levels triggered removal actions. Plutonium was one of the primary contaminants of concern in surface soil at the former RFP; for plutonium, its a 1one in 100,000 carcinogenic risk was calculated to be equivalent to 116 pCi/g of plutonium in soil. After discussions with community officials, DOE, EPA, and CDPHE the regulatory agencies further reduced the surface soil action level for plutonium to 50 pCi/g of soil. Following remediation, residual plutonium concentrations in surface soil were below levels of regulatory concernstandards. The final remedy in the Corrective Action Decision/Record of Decision (CAD/ROD) was based on the Remedial Investigation/Feasibility Study (RI/FS) report, which included a comprehensive risk assessment that evaluated both human and ecological risks. The remedy chosen in the 2006 CAD/ROD, conformed to state and federal environmental regulations. As stated in the CAD/ROD, the selected remedy was institutional and physical controls with surface water and groundwater monitoring, including ongoing treatment of groundwater at the existing groundwater treatment systems and landfill cover maintenance at the two landfills.
C. Land Use Assumptions	The adequacy of remedies at Rocky Flats are limited by specific land use assumptions that are no longer valid. Specific concerns include: - To justify deletion of the areas now constituting the Wildlife Refuge from CERCLA, assumptions were made about the lack of soil disturbance and human exposures that are now very questionable given plans for a DOE funded visitor center, trail construction as part of the Greenway project and future highway construction. - Other human receptors such as construction workers building highways or bike paths, or volunteers working on trails and other maintenance activities, were never considered and no such exposures have been formally evaluated. - New exposure pathways now exist that have never been evaluated due to changes in land use and the 100-year flooding event. - There is no data or other information sufficient to establish that the current remedies are adequate to protect human health in the face of the planned land use changes or the impacts of the flooding event. The Five-year review must recommend either a reevaluation of the remedies to address these issues or call for a halt to the land use changes. - Significant changes in circumstances, including burgeoning housing developments adjacent to the site and proposed increased public access to the Refuge, have rendered the COU remedy's physical and institutional controls obsolete and ineffective.	The land use for the COU remains consistent with that stated in the CAD/ROD: land ownership is expected to remain with the United States government and DOE-LM will manage the COU for remedy-related purposes. Lands that constitute the POU and OU3 were determined to be suitable for any use (i.e., UU/UE). This means that there are no restrictions on the use of the Refuge or OU3 offsite areas lands and they may be used for any activity (i.e., under any exposure scenario). As a result, changes in land use will not affect the UU/UE determination. That determination was based on risk assumptions for Wildlife Refuge Worker and Wildlife Refuge Visitor scenarios, as well as comparisons of environmental sampling data with preliminary remediation goal (PRG) values (1×10^{-6} risk) calculated for a Rural Resident scenario. The impacts of the severe weather events experienced during this FYR period are discussed in relation to remedy protectiveness in Sections 6.1.3.1, 6.1.4.2, and 6.3 of this FYR report.

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Group	Input Summary	Response
D. Additional Monitoring	1. Conduct air/dust monitoring within the COU. 2. Conduct air/dust monitoring and soil sampling within the Rocky Flats National Wildlife Refuge. 3. How can you know whether air and soil conditions have changed if there is no monitoring?	1. *Conduct air/dust monitoring within the COU.* Monitoring of air was not required by the CAD/ROD as part of the final remedy for the COU because vast amounts of data on contamination at and near the former RFP~~Rocky Flats~~ had already been gathered. Air monitoring essentially began when the RFP began operating in 1952; large-scale, continuous air monitoring began as early as 1971. The Department of Energy (DOE) conducted point source air monitoring (e.g., stack and building emissions) and ambient air monitoring to demonstrate regulatory compliance, as well as to monitor fugitive radionuclide emissions from decommissioning, remediation, and demolition operations. CDPHE operated an air monitoring network inside the RFP boundary and a network of five perimeter samplers ~~outside the boundary~~. During closure, EPA set up air monitors adjacent to cleanup projects to ensure that radiation limits for workers were not exceeded. In 1989, federal regulations were issued for the protection of the public from radioactive air emissions from DOE facilities (40 *Code of Federal Regulations* 61, Subpart H). These regulations, the *National Emission Standards for Emissions of Radionuclides Other Than Radon From Department of Energy Facilities* (Rad-NESHAP), limit annual dose to any member of the public to 10 mrem/year through the air pathway ~~to any member of the public to 10 mrem/year~~. The dose from radionuclide air emissions (plutonium, americium, and uranium) at the RFP never exceeded this limit. In fact, for the entire period of active demolition and remediation at the site which would have generated the greatest amount of airborne dust, annual dose was less than 3% of the standard. Put more simply, during site cleanup, the radiation dose did not exceed the 10 mrem/year standard and amounted to a less than 1 mrem/year dose to the public. For comparison, watching television provides an annual dose of less than 1 mrem and a medical diagnostic x-ray provides an average annual dose of 40 mrem. With completion of accelerated actions in 2005, all air emissions point sources (e.g., buildings) had been eliminated and non-point (diffuse) sources had been significantly reduced by remediation of contaminated soil. Subsequent revegetation of all disturbed areas further stabilized soils and reduced diffuse source emissions. The CAD/ROD acknowledged that the resuspension of residual radioactive contaminants attached to surface soil particles would remain a potential source of ongoing air emissions at the site (DOE, EPA, CDPHE 2006). However, air dispersion modeling conducted following accelerated actions concluded that the resulting dose to a member of the public from these diffuse sources would still be much less than the 10 mrem/year standard (DOE 2006). The CAD/ROD concluded that, "With completion of all accelerated actions and the attendant removal of all historical air emissions sources except for wind erosion of the minor, remnant contamination in surface soils, future air emissions from the site will be less than those in the past" (past air emissions were less than 3% of the standard). After demonstrating that the Rad-NESHAPs limit was not exceeded for many years before, during and after site cleanup, DOE sampling was terminated in 2007; CDPHE discontinued air monitoring in 2005. Current site conditions in the COU are protective of the public and air/dust monitoring is not necessary. 2. *Conduct air/dust monitoring and soil sampling within the Rocky Flats National Wildlife Refuge.* Lands that comprise the Refuge, ~~or~~ also known as the POU, were determined to be suitable for any use. That ~~, that~~ is, they meet the criteria for UU/UE. This means that there are no restrictions on the use of the Refuge lands. Air monitoring is not required on the Refuge based on the years of monitoring data collected at the former RFP (within the COU and POU), as summarized in response #1 above. Soil data collection is not required because the data available at the time of the final remedy decision ~~was more than adequate to determine conditions in the POU;~~showed contaminant levels in soils in the POU are below risk-based regulatory levels that would have required remediation or would require restrictions. Therefore, site conditions on the Refuge are protective of the public and air/dust or soil monitoring is not necessary. 3. *How can you know whether air and soil conditions have changed if there is no monitoring?* ~~Monitoring would provide direct evidence of air and soil conditions, however monitoring of air and soil was not required by the CAD/ROD as part of the final remedy for the COU.~~ Monitoring ~~wa~~is not required by the CAD/ROD because vast amounts of data on contamination at and near the former RFP have already been gathered. Ongoing s~~S~~urface water monitoring ~~can~~ serves as an indicator of remobilization of contaminants from surface soils, as discussed in Sections E1.2.1.1 and E1.2.1.2 of this fourth FYR report. In addition, ~~a lack of major erosion and~~ the establishment of mature vegetation and lack of major soil erosion ~~tends to~~ reduces the probability of any residual contaminants entering the air or being removed from the soil.

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Group	Input Summary	Response
E. Question A	Based on point of compliance (POC)/point of evaluation (POE) exceedances of *Rocky Flats Legacy Management Agreement* (RFLMA) standards and Original Landfill (OLF) slumping, DOE-LM cannot state that the remedy is functioning as intended by the decision document. Specific concerns include: 1. Uranium exceedance at Walnut Creek POC (WALPOC). 2. OLF slumping. 3. Data are~~is~~ inadequate to determine protectiveness~~; DOE is collecting insufficient or incorrect data to support permanent resolution of remedy failures~~. 4. The water sampling protocol is limited by flawed assumptions and weather-related failures. 5. DOE is collecting insufficient or incorrect data to support permanent resolution of remedy failures.	Section 6.1 of this fourth FYR discusses Question A, "Is the remedy functioning as intended by the decision documents?" 1. *Uranium exceedance at WALPOC.* The reportable conditions at the POEs and POCs during this FYR period and how they relate to the protectiveness of the remedy are discussed in Sections E1.2.1 and 6.1.3.1, respectively. DOE-LM acknowledges that this is the first time uranium standards at WALPOC have been exceeded since closure of the ~~Site~~former RFP. As a result, a comprehensive evaluation of these conditions was conducted (see Section 6.1.3.1). ~~It should be noted, however, that POC results are not the only r~~Remedy performance is evaluated using several other indicators as outlined in ~~evaluated by the~~ RFLMA, to include ~~parties. Other indicators include~~ surface water monitoring results from locations upstream of POCs, groundwater monitoring results, landfill inspection results, treatment system operation and maintenance, ~~O&M monitoring and~~ performance monitoring results, and observations during inspections. The evaluation of POC and POE exceedances and any subsequent corrective actions are addressed through the RFLMA consultative process. The RFLMA parties (DOE-LM, EPA, CDPHE) have agreed that based on the data evaluated to date, corrective actions are not warranted to address the uranium exceedance at WALPOC. Monitoring data is reported in the quarterly and annual RFLMA reports and discussed with the public at the quarterly RFSC meetings. 2. *OLF slumping.* Discrete areas of the OLF are slumping. This slumping is being addressed as part of ongoing landfill maintenance activities, which are part of the selected remedy in the CAD/ROD. Specifically, the CAD/ROD requires continued operation and maintenance of engineered structures, such as the landfill covers and groundwater treatment systems. Refer to Section 6.1.4.2 of this fourth FYR report for a discussion of the OLF in relation to protectiveness. 3. *Data are~~is~~ inadequate to determine protectiveness.* The media (surface water and groundwater) to be monitored at the former RFP following closure were determined in the 2006 CAD/ROD, based on the results of the RI/FS. Monitoring frequency and sample analyses are prescribed by RFLMA. Monitoring data are important in the evaluation of site protectiveness and are~~, but must be~~ reviewed in conjunction with other information ~~in order~~ to determine whether the remedy is protective. Other such information includes the results of monthly and weather-related landfill inspections ~~results~~, groundwater treatment system operations and maintenance monitoring, observations during annual site-wide inspections, and effectiveness of institutional and physical controls. 4. *The water sampling protocol is limited by flawed assumptions and weather-related failures.* The surface water monitoring ~~sample collection protocols~~network is a robust and sophisticated system that collects automated, flow-paced composite samples. This system design allows for the collection of samples that represent water quality over a period of time (as opposed to a single point in time), based on how much water is flowing through the system. Following the 2013 flood event, the surface water monitoring system was ~~have been~~ enhanced to reduce sampling interruptions ~~limit data loss~~ during extreme weather events (see ~~also~~ Group I response below). 5. *DOE is collecting insufficient or incorrect data to support permanent resolution of remedy failures.* ~~DOE does not rely solely on the routine monitoring data collected under RFLMA to make d~~Based on the evaluation of remedy performance completed for this FYR, the remedy is functioning as intended by the CAD/ROD and is protective of human health and the environment (see Section 8.0 of this fourth FYR report). This conclusion is based on several sources of information, such as groundwater and surface water routine monitoring data, site inspections, treatment system operation and maintenance, and other data collected to evaluate specific conditions. The RFLMA consultative process provides the mechanism for the identification of data needs and allows for the collection of additional data/information to support evaluation of site conditions (e.g., OLF slumping, POC exceedances). ~~ecisions on remedy performance.~~ For example, DOE has contracted two independent geotechnical studies of the slumping at the OLF (see Section 6.1.4.2 of this fourth FYR report) and a comprehensive study of uranium in the Walnut Creek drainage (see Section 6.1.3.1) to better understand these site conditions. ~~The RFLMA consultative process provides the mechanism for the identification of data needs and allows for the collection of additional data/information to support evaluation of site conditions (e.g., OLF slumping, POC exceedances).~~

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Group	Input Summary	Response
F. Question B	1. What is the trigger for remedial action objective (RAO) revision? 2. How do you know if exposure mechanisms have changed?	Section 6.2 of this FYR discusses Question B, "Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of remedy selection still valid?" 1. *What is the trigger for RAO revision?* As stated in EPA guidance (EPA 2001), the FYR should include an evaluation of remedy performance and RAOs to determine if the RAOs are being met. Depending on the outcome of this evaluation, it may be necessary to modify the RAOs, modify the remedy, or conduct further response actions. The fact that a RAO is not currently being met, however, does not necessarily compel action. For example, the 2006 CAD/ROD acknowledged that residual concentrations of VOCs in groundwater in some areas "are likely to persist in the environment at Rocky Flats for decades to hundreds of years" (DOE, EPA, CDPHE 2006). The CAD/ROD recognized ~~is suggests~~ that Groundwater RAO 2 (see Table 4 of this fourth FYR report) may not be achieved for some time. Nevertheless, the remedy currently remains protective because active groundwater treatment systems continue to reduce contaminants entering surface water, and institutional controls restrict the use of groundwater and prohibit the construction of buildings, thereby controlling exposure. 2. *How do you know if exposure mechanisms have changed?* Lands that constitute the POU and OU3 were determined to be suitable for UU/UE in 2007. For the POU, this determination was based on risk assumptions for the Wildlife Refuge Worker and Wildlife Refuge Visitor scenarios, as well as comparisons of environmental sampling data with preliminary remediation goal (PRG) values (1×10^{-6} risk) calculated for a Rural Resident scenario. For OU3, the UU/UE determination was based on a residential exposure scenario. The UU/UE determination means that the POU and OU3 lands are protective of human health and the environment even if exposure mechanisms (or pathways) change. Changes to exposure mechanisms/pathways in the COU are evaluated during the FYR process through direct observation of site conditions (e.g., evidence of unauthorized access, vandalism) and monitoring and effectiveness of institutional controls (see Sections 3.3.2 and 6.1.1 of this fourth FYR report). ~~The best way to know if there are new exposure pathways would be through direct observation of land use and monitoring of institutional controls. Changes in land use plans or zoning for areas surrounding a site may result in updated assumptions.~~
G. Question C	The comprehensive Five-year Review Guidance at Section 4.0 specifically calls out natural disasters, such as a 100-year flood event, as requiring an affirmative answer to Question C from the EPA Guidance. This makes further evaluation of the adequacy of the remedy in light of the flooding event a necessary outcome of this five-year review.	Section 6.3 of this FYR discusses Question C, "Has any other information come to light that could call into question the protectiveness of the remedy?" The EPA FYR guidance ~~(Section 4.0)~~ provides examples of situations that should be considered in the FYR to answer Question C. This question need only be answered in the affirmative if the protectiveness of the remedy has been called into question. The former RFP experienced two severe weather events during this FYR period, which are discussed in relation to remedy protectiveness in Sections 6.1.3.1, 6.1.4.2, and 6.3 of this fourth FYR report.
H. Groundwater Treatment Systems	The continued exceedances of RFLMA standards by effluent from the Solar Ponds Plume Treatment System (SPPTS) and the Present Landfill Treatment System (PLFTS) ~~groundwater treatment systems~~ calls into question the effectiveness of these groundwater treatment systems.	Refer to Sections E1.1.2.2 (SPPTS) and 6.1.4.1 (PLFTS) of this fourth FYR report for a discussion of remedy performance at these treatment systems in relation to protectiveness. Monitoring data associated with the groundwater treatment systems provide valuable information to support the evaluation of remedy performance. The effluent data from these treatment systems are considered in conjunction with routine monitoring data, ~~and~~ inspection results, and institutional controls to evaluate the protectiveness of the remedy.

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Group	Input Summary	Response
I. Flooding	1. The 2013 flood event incapacitated surface water monitoring equipment to the point that ~~DOE-LM does not know~~ the quantity of contaminants that migrated off the COU in unknown. 2. No sediment sampling has been done to investigate contaminant migration off the COU. Increased exposures to radioactive materials in sediment or groundwater mobilized during flooding events, has not been evaluated.	1. *The 2013 flood event incapacitated surface water monitoring equipment to the point that DOE-LM does not know the quantity of contaminants that migrated off the COU.* The COU~~Site~~ experienced very high flows during the second week of September 2013. In some cases the high flows and debris caused damage to the automated sampling equipment, resulting in temporary interruptions in composite sampling. At almost all locations, the unanticipated runoff volumes caused flow-paced composite bottles to fill before personnel could safely replace them with empty bottles. Access to various areas of the COU was unsafe and restricted by local authorities during certain periods. At the Woman Creek POC (WOMPOC), although sampling was interrupted for 22 hours and 10 minutes, 326 grab samples were collected from late on 9/11/13 through 9/13/13. Similarly, at the most downstream Walnut Creek POC (GS03), although sampling was interrupted for 7 hours and 8 minutes, 469 grab samples were collected on 9/12/13 through 9/13/13. Monitoring data both before and after the sampling interruptions, from numerous locations in the COU, coupled with the fact that the majority of the runoff originated offsite, do not suggest that high contaminant concentrations occurred. DOE has since made improvements to the surface water monitoring systems to minimize sampling interruption during extreme, low-probability weather events. Secondary automated samplers have been installed at each POC to provide backup sample volume capacity. In the event of extreme flows resulting in the premature filling of the primary sampler, the secondary sampler will automatically begin to collect samples, ensuring extended sampling until personnel can access the site. Surface water samples collected for RFLMA monitoring are not filtered prior to analysis. Therefore, these sample results represent the combination of contaminants detected in the dissolved fraction of the water and contaminants detected in the suspended solids portion of the water. While sediment sampling is not required as part of the remedy in the COU, surface water sample results provide an indication of the concentration of contaminants associated with sediment that could settle out in the streambed. The surface water remedial action objective (RAO) is "Meet surface water quality standards, which are the Colorado Water Quality Control Commission surface water standards". The surface water standards are concentration-based values and surface water monitoring sample concentrations are measured so they may be compared to these standards. The total quantity (mass) of contaminants is not measured directly by routine monitoring activities. ~~DOE has since made improvements to the surface water monitoring systems to prevent future loss of data during extreme weather events. The flow-paced surface water monitoring system previously included one sample container for water collection. Under normal conditions, the first container typically has sufficient capacity to collect the sample; however, as demonstrated in the 2013 flooding event, this container can be quickly filled during an extreme weather event. A second sample container was added to each sample location to provide additional sample volume capacity. With the current system, the second container will automatically begin to collect composite water samples once the first container is full, ensuring that samples are collected even at higher-than-normal water flow rates.~~ 2. *No sediment sampling has been done to investigate contaminant migration off the COU. Increased exposures to radioactive materials in sediment or groundwater mobilized during flooding events, has not been evaluated.* Surface water exiting the COU via Woman Creek is ultimately captured in the Woman Creek Reservoir, which is part of the Standley Lake Protection Project. The reservoir was constructed in the mid-1990s by the City of Westminster, with the objective of protecting Standley Lake (a drinking water source) from contaminated stormwater runoff. Water entering Woman Creek Reservoir is held for ninety days, treated if necessary, and tested for quality before being released (http://www.ci.westminster.co.us/ExploreWestminster/OpenSpace/OpenSpaceAreas/WestminsterLandofLakes/WomanCreekReservoir). From the reservoir, the water is pumped to the northeast into Walnut Creek, altogether avoiding Standley Lake. Sediment in the Woman Creek Reservoir is periodically sampled by the Woman Creek Reservoir Authority; the most recent report of sampling results was published in May 2014.

WORKING DRAFT

Group	Input Summary	Response
J. OLF	1. Continue monthly inspections of the OLF and require additional monitoring of up-gradient groundwater levels. 2. Highly toxic polychlorinated biphenyls (PCBs) are being air-stripped from groundwater into the environment, mainly in the OLF.	*1. Continue monthly inspections of the OLF and require additional monitoring of up-gradient groundwater levels.* The current monthly inspection frequency for the OLF is mandated by RFLMA and cannot be changed~~decreased~~ unless authorized by the RFLMA parties. In addition to the monthly inspections, the OLF is also inspected following extreme weather events as required by RFLMA. The monitoring of groundwater levels upgradient of the OLF is conducted to support and inform evaluation of OLF conditions and will continue at the discretion of DOE-LM. 2. *Highly toxic PCBs are being air-stripped from groundwater into the environment, mainly in the OLF.* This statement is incorrect. There is no air stripping treatment occurring at the OLF. There is no PCB treatment occurring at the OLF or anywhere in the COU. PCBs are not contaminants of concern in the groundwater contaminant plumes in the COU. ~~treatment of PCBs, air stripping or otherwise, occurring in the COU.~~ Air stripping is used for the ~~a proven, effective~~ treatment of~~for~~ volatile organic compounds (i.e., chemicals that evaporate readily) in groundwater from the East Trenches and Mound Site contaminant plumes (see Section 6.1.4.3 of this fourth FYR report). ~~in soil and water, but is not a proven technology for PCBs.~~
K. PLF	The fourth FYR should include a clearly defined corrective action plan to address ongoing water quality issues at the Present Landfill (PLF).	Refer to Section 6.1.4.1 of this fourth FYR report for discussion of monitoring results at the PLF. The RFLMA consultative process has been triggered by PLF treatment system ~~PLFTS~~ effluent monitoring results during this FYR period. However, the RFLMA parties have not required corrective action in response, since downstream surface water quality has not been impacted. The determination whether a corrective action (mitigation) plan is necessary to address s~~S~~ite conditions is made by the RFLMA parties through the RFLMA consultative process. Although the FYR report may identify issues and make recommendations based on the results of the technical assessment, any necessary action plans would be developed independent of the FYR process. Therefore, it is not appropriate to include corrective action plans in the FYR report. The RFLMA consultative process allows for the more timely identification, evaluation, and mitigation of issues rather than the FYR process.
L.	Several studies were cited that contradict or otherwise call into question the assumptions made during accelerated cleanup: 1. Smallwood, Shawn, "Soil Bioturbation and Wind Affect Fate of Hazardous Material that were released at the RFP (Nov. 23, 1996). 2. Chromec, Win et al. Report on Soil Erosion/Surface Water Sediment Transport Modeling for the Actinide Migration Evaluation at the RFETS (2000). 3. Heller, Arnie, "Plutonium Hitches a Ride on Subsurface Particles", Oct/Nov 2011. 4. Kersting, Annie et al., "Migration of plutonium in groundwater at the Nevada Test Site" (Nature, Jan. 7, 1999). 5. Hei, Tom et al. "Mutagenic effects of a single and an exact number of alpha particles in mammalian cells", National Academy of Sciences, April 1997.	**Still being worked.**

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Individual Input		Response
ML. Uranium maximum contaminant level (MCL)	The CERCLA review should not make references to the current EPA drinking water standard for uranium since the drinking water standard does not apply to the sSite.	DOE-LM acknowledges that the uranium MCL is not applicable to the COU; the MCL is a nationwide health-based standard applicable to public water supply systems. Comparison of uranium concentrations to the drinking water standard in the FYR report is included simply to offer perspective on the quality of surface water at the COU boundary.
NM. Hazardous Waste	The Resource Conservation and Recovery Act (RCRA) permit for the Rocky Flats Site is limited to Hazardous Waste Generator. The last documented biennial report was in 2005. Yet DOE-LM currently utilizes erosion control materials (wattles, air stripping and matting) to mitigate the migration of contaminants of concern. DOE-LM has not documented the sample analysis of such media, filed any RCRA biennial reports nor provided regulatory authority to treat, store or dispose of the contaminants of concern at the Rocky Flats Site.	The RFP previously held a RCRA permit as a hazardous waste treatment, storage, and disposal facility (TSD) and was required to submit biennial hazardous waste generator reports in accordance with 40 CFR 264.75. The RCRA permit was terminated in 2006. DOE-LM rarely generates hazardous waste in the conduct of legacy management activities and as a small, or very small, quantity generator is exempt from generator biennial reporting requirements. Sample results associated with wastes generated at the site are documented in project files and are provided to the disposal facilities that receive wastes from the site. As a previous TSD facility, DOE-LM is required to submit a biennial report in accordance with Section 3016 of RCRA. This report, *Inventory of Federal Hazardous Waste Activities at Formerly Owned or Operated Federal Facilities*, includes a description of the location of the facility and the amount, nature, and toxicity of the hazardous waste at the site. The most recent 3016 biennial report was filed in 2016.
ON. FYR Report	This is only the second CERCLA Five-Year Review since the final physical and regulatory closure occurred at the Site in 2006.	The trigger for the first FYR was the signing of the CAD/ROD for OU3 in 1997; the first FYR report evaluated data from 1997 - 2001. The site was closed at the end of 2005. The second FYR report evaluated data from 2002 - 2006, which included one year of post-closure data. The third FYR report evaluated data from 2007 - 2011, and is the first review to include five continuous years of post-closure data. This fourth FYR report evaluated data from 2012- 2016 and is the second report to include five continuous years of post-closure data.
PO. Quarterly Technical Meetings	Recommend continuation of the Quarterly Technical Meetings and request they occur four months after RFLMA technical documents are released.	DOE-LM will coordinate with interested stakeholders regarding meeting frequency and timing, as requested.DOE intends to continue the Quarterly Technical Meetings and will coordinate with interested stakeholders regarding meeting frequency and timing.

References:

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DOE (U.S. Department of Energy), 2006. RCRA Facility Investigation-Remedial Investigation/Corrective Measures Study-Feasibility Study Report for the Rocky Flats Environmental Technology Site, prepared by Kaiser-Hill Company, LLC for the U.S. Department of Energy, June.

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